

Royal College of Surgeons.

2.

A NEW TREATMENT

OF THE SO-CALLED

INCURABLY DEAF PEOPLE

BY

Julian J. HOVENT, M. D.

Medical Superintendent of the Pneumotherapeutic and Electrotherapeutic Institute
of Brussels

Member of several Belgian and Foreign Scientific Societies.

With a Sketch by Lucien WOLLES and other Engravings.



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LIÈGE

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OF THE SO-CALLED

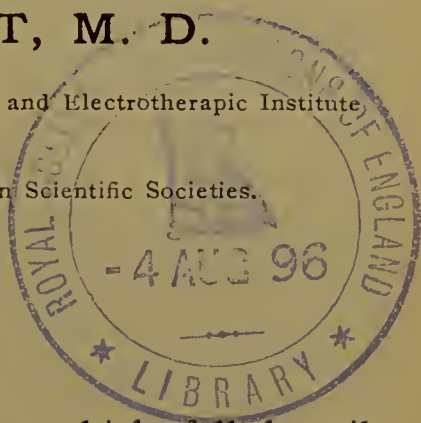
INCURABLY DEAF PEOPLE

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AMONG the ill-fated conditions which fall heavily on mankind, the one which I am here alluding to, is peculiarly distressing. Indeed the deaf, and chiefly the deaf and dumb, are not looked upon as patients who deserve medical or surgical treatment, but merely as wretched persons who have even to be cared for by public Authorities.

Furthermore the loss of speech, instead of enticing a sympathetic feeling to the individual, excites always a worrying curiosity and not unfrequently sorry jokes from the part of the most benevolent people.

As soon as a child is found to be lacking of speech, the physician is required to advise about the matter; should he at the same time observe that the hearing is deficient, his task has ended, and the teacher has to be called upon. Even the most skillful aurist is convinced his interference would be utterly useless to the deaf and dumb.

Such a complete despondency is also to be expressed in the numberless cases where patients with deafness have been vainly submitted to catheterisation and Politzer's douche. I mention these two means of reaching and inflating the tympana, because they are the only available treatments, employed by every aurist in all cases of ear troubles.

The inefficacy of medical treatments in aural diseases, is openly acknowledged by eminent English authors, who, thus, prevent the patients suffering with deafness of being imposed on. I quote the following statements:

« I need not remind you that pathology has long since taught us how very exceptional are the instances in which physicians and surgeons may be said to cure disease, still less do they cure symptoms, and impaired hearing is merely a symptom of disease ». (W.B. DALBY.)

« The treatment and pathology of aural diseases, more especially such as are attended with simple chronic difficulty of hearing, are, it must be confessed, in a lamentably unsatisfactory state ». (R. T. COOPER.)

French authors do not write with so much conscience. They make a boast of their « instruments de précision » and their « opérations délicates », which decidedly are of no use, neither for diagnosis nor for treatment. In hopeless cases, they extol the « massage du tympan » and other ridiculous quackeries, which never were of any benefit to the patient. Deaf people are circumvented, and induced to be treated year after year, without the least result, under the false pretence of having their infirmity not cured, but merely *arrested* in its development.

The « lamentably unsatisfactory state » of medical knowledge in ear diseases, is such that notwithstanding the numerous and assuming attempts, we are still nowadays unable to discern a shammed deafness from a real one.

I think a further advance in the treatment of ear diseases is much to be desired; hence I am going to relate my first experiments in aerotherapeutic treatment of deaf-mutes; I am convinced that, writing for English people, my work will be read with true *Science* and *Philanthropy*.

Compressed Air-Bath, here often referred to, was empirically employed for a great many years, and then, the valuable works of German authors (von Liebig, Lange, von Vivenot, etc.) gave it the importance of a scientific method of Therapeutics.

As far back as 1892, I contrived some modifications to the Compressed Air-Bath, which unexpectedly cured ear troubles of patients under treatment for other diseases. In the course of 21 months, 138 persons were expressly treated for complicated deafness of all kinds. Though all of them, except 4 or 5, had been deemed incurable by well known aurists of Belgium and France, the result was 35 per cent of complete cures.

Furthermore I was led to consider the following statements as duly established conclusions:

1° *With grown-up persons, in nine cases out of ten, some modifications of Compressed Air-Bath give a notable improvement of the hearing, from the first trial, when other treatments have been, for many years, useless and even harmful.*

2° *With children and adolescents, in four cases out of five, a complete cure of deafness and a notable improvement of deaf-muteness are obtained after some hours of treatment.*

In several other papers I have reported at full length numerous observations of deafness cured in my apparatus; the following table will show some instances of them, chosen among the patients sent to my Establishment by their family physician.

Some instances of Ear Diseases thoroughly cured by Compressed Air-Bath

Sex.		Age		Profession		Duration of the Disease of the Treatment		OBSERVATIONS	
I. Simple Deafness									
1	f.	11	years	Scholar	9 to 10 years	1 1/2 hour	Deafness diagnosed <i>Paralysis</i> , occurred after pseudo-membra- nous angina.		
2	f.	27	"	Teacher	10 "	14 hours	Severe deafness. Medical certificate necessary to practise as a teacher was refused to her, on August 3 rd 1887.		
3	f.	19	"	Without	10 "	6 "	Catarrhal deafness, always severe.		
4	f.	19	"	"	5 "	10 "	Very severe deafness which occurred after measles.		
5	f.	51	"	"	30 "	14 "	Very severe deafness.		
II. Deafness with Discharge of the Ears									
1	f.	13	years	Scholar	11 years	6 hours	Very severe deafness with profuse discharge.		
2	m.	13	"	"	7 "	11 "	Deafness, with moderate discharge and nervous complaints.		
3	f.	7 1/2	"	"	5 to 6 "	1 3/4 hour	Severe deafness with profuse discharge.		
4	m.	25	"	Inkkeeper	19 "	2 hours	" " " " "		
5	f.	25	"	Trader	6 "	11 "	" " " " "		
III. Deafness with various Complications									
1	m.	28	years	Without	9 years	18 hours	Exostosis the day had been fixed for its surgical removal.		
2	m.	13 1/2	"	Scholar	7 "	2 "	Deafness, Discharge from and Polypi of the Ears.		
3	f.	9	"	"	7 to 8 "	2 "	" " " " " severe Bronchitis		
4	m.	12	"	"	4 "	6 "	" " " " of the Ears and Pharynx.		
5	m.	15	"	"	3 1/2 "	2 "	Severe deafness cured after 2 hours. Bronchitis, nervous com- plaints and Hypermetropia cured after 25 hours.		

I ought to determine here the modifications which give the Air-Bath such a powerful action. But the necessary technical particulars would be generally judged too tedious, and material dangers might result from insufficient indications.

Only few of the existing Aerotherapeutic Establishments are provided with the apparatus, for the special treatment of ear diseases. They have been constructed only in Belgium and Germany.

My intention is to report chiefly upon the worst cases of patients with ear troubles, namely the deaf-mutes.

By my aural practice I became convinced that, and aurists are unanimous, almost every case of deafness has originated in childhood. Also it was obvious that the sooner a case was treated, better would be the results.

Moreover, deaf-muteness often is, if not always, to be considered as the sequel of one of the numerous auditory affections, causing deafness at a time when the articulated speech is not yet sufficiently developed.

Bearing in mind these considerations, I thought that at least, some deaf and dumb patients might benefit more or less by aerotherapeutic treatment; and I decided to make some trials which happily resulted to justify my opinion.

It was not very easy to get patients to experiment on. Several physicians to whom I applied, met me with such evident scepticism that I should have given up my scheme, had I not been thoroughly convinced as to the result.

The first deaf-mute I got, was a child of two years old, too young, consequently, to give an exact account of the effects produced on the hearing function by Compressed Air-Baths. I could only notice that the treatment of this case soon succeeded in curing the discharge of the ears, formerly vainly treated by boric acid.

Later on, eleven patients were successively submitted

to aerotherapeutic treatment. In every case, after the first medical examination, I had but little hope of obtaining any result whatever, so great was the variety of injuries centred in the auditory organs.

The deafness, always very severe, and frequently complete, seemed as if it would entirely resist any therapeutical means. Four of these patients were brother, sisters and cousin german. They were deaf and dumb from their birth, with the most obvious taint of heredity. No aurist-surgeon would have had the least hope of any improvement in their state. In the case of two boys, meningitis was stated as the primordial cause of deaf-muteness. Nowadays it is conceded that meningitis and its sequels are out of the reach of any treatment whatever. One patient was claimed to be deaf and dumb, not only by heredity, but by meningitis also. Almost every subject presented auricular injuries which were of the most discouraging kind.

It was impossible to undertake these experiments under more unfavorable circumstances. However I could not give them up, and thus see all my hopes definitively vanish. Aerotherapy had already given results absolutely unexpected in ear diseases, why should it be now completely powerless ?

Besides, is deaf-muteness, in itself, so serious, as it is represented, on account of its heredity? We do not necessarily inherit diseases, but weakness of the implicated organs ; we may be hereditarily *disposed* to diseases of the ears. Every one of these patients had chronic catarrhal affections of the nose, throat, larynx, etc. They had inherited weakness, extreme susceptibility, of these organs, but this was no reason to throw away every hope for improvement, as it is well known that in catarrhal affections, no treatment is more efficacious than the Compressed Air-Bath.

As to the meningitis, it might have been caused by accidental extension of an auricular injury to the envelopes of the brain. The acute period of the disease having elapsed, the resulting deafness might perhaps be occasioned only by a persistent ear trouble, cerebral lesions being repaired.

Another consideration also prompted my experiments; it was the absolute confidence in the harmlessness of aërotherapeutic treatment, when applied methodically and cautiously.

Before giving at length the history of every patient, some general remarks may be useful.

A complete examination of the patients was made with the help of many other physicians, one of them having been a special student in aural practice. In several cases they advised to have recourse to surgical means to remove adenoïd growths, and thus to expedite the improvements. I did not agree with them because I expected a slow but effective action of the compressed air on the enlarged tonsils, and even on the polypi, in whatever situation. I also gave up every other kind of treatment, in order to ascertain that the Air-Bath only had been acting in these conditions.

The particulars we got from the parents were not always to be trusted and relied upon; frequently they were inconsistent, chiefly in reference to family taints, discharges from the ears, etc. The parents sometimes did not remember what had happened during the infancy of their children; sometimes they seemed ashamed of giving secret particulars about themselves and their relatives. We were obliged to scrutinize any statement and to take into consideration only what seemed absolutely true.

In the medical examination, many patients not being sufficiently intelligent to give exact reports of symptoms,

we often omitted noting the particulars about noises in the head and tests by the tuning-fork. In every case, on account of the lowness of the hearing, the Rinn's experience was never possible.

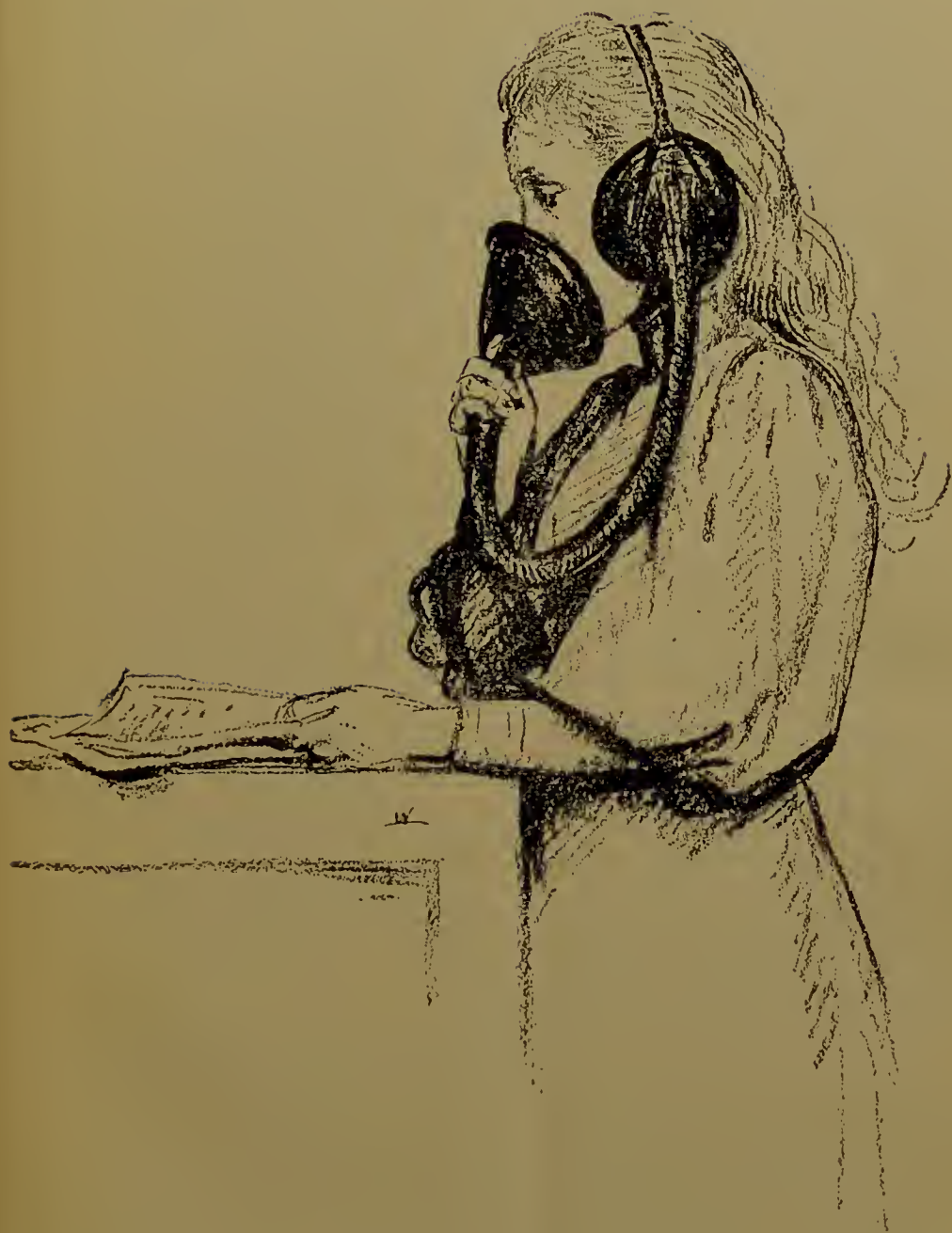
When they had been administered twenty Air-Baths, I was able to judge that I should probably not be successful with several patients ; it thus was my duty to tell them so. However I did not, even under these circumstances, give up the treatment, nor lose all hope and, except in one instance, I had the gratification of seeing a most unexpected improvement.

When the hearing was somewhat increased, but not enough to enable the patient to hear his own voice, I contrived an ear-trumpet by which he could hear himself when reading. When he became able to perceive his own voice, there were manifestations of joy which were quite encouraging. Somewhat later, several patients did not need the instrument, distinctly hearing their own voice.

I prescribed frequent reading through the ear-trumpet; but it was not regularly done. Furthermore, through the parents' indifference, I could not obtain the separation of the patients one from the other ; the parents being of the working classes, they could hardly manage to have their children mixed with normal children, and thus to compel them to make an effort to talk and hear.

The ear-trumpet here referred to is merely an india-rubber pipe, bent round, the extremities being enlarged to form bells. One bell is to mask mouth and nose, to avoid the obstacle to the speech which exists when only the mouth is covered. I also devised to enclose the whole pavilion of the ear in the other bell ; the pavilion has its special functions, and these functions which are probably rudimental in deaf-muteness, have also to be developed.

In almost every case, I noticed the measures of



A DEAF-MUTE GIRL READING THROUGH
AN EAR-TRUMPET.

hearing power with instruments less and less audible, according to the progressive improvement of the patients. Undoubtedly, it would have been useful, if not necessary, to state the exact proportion between these successive measures; vainly I tried to establish that proportion; it seemed to differ from one patient to the other and furthermore from one day to the other. These unexpected anomalies were chiefly observed when the patients were just coming out of the air-chamber, and were burdened by the noises in the head, which noises are sometimes momentarily increased under the immediate influence of the Compressed Air-Bath.

I have given my experiments the greatest possible publicity among physicians; expecting that some one would consider the matter with interest and advise some useful modification of my treatment. About twenty of them have visited my patients, and two leading practitioners, of Brussels, who were at the same time under aerotherapeutic treatment for deafness, have hence had the opportunity of daily controlling my results.

In order that it may be understood why the treatment was not persevered with, it is necessary to explain that the State, being anxious of insuring as far as possible the future well-being of its indigent deaf-mutes, devotes considerable sums to the education and maintenance of each pupil of special Institutes.

My experiments were practised during the holidays only, and it is obvious that patients, being encouraged by the early improvement which happened in several of them, were very punctual in their visits at my Establishment. When the time came for them to go back to their Institutes, both patients and their parents deeply regretted not to be allowed to persevere with the treatment. But the removal of the pupils by their parents would have entailed the relinquishment of considerable pecuniary advantages.

Though for some patients the experiments remained incomplete, every one must agree, the following conclusions are to be drawn from a close study of my observations :

Nowadays there are a great many people who are looked upon as incurably deaf, such as the deaf-mute. Frequently the practitioner does not deem it advisable to make even a superficial examination of them ; he trusts to Pedagogy for that which ought always to have been in the sphere of Medicine.

This lamented state of things is the consequence of the powerlessness of the medical and surgical treatment of aural diseases.

Some modifications of Compressed Air-Bath give, at times from the first hour of treatment, an appreciable improvement in the worst cases of deafness and deaf-muteness.

Compressed Air-Bath is applicable in every case of ear trouble, because diagnosis is never absolutely exact. It has given a complete cure, after some hours, in cases of paralysis, exostosis, etc., so diagnosed by the well known aurists.

In the observations hereafter reported, the patients were almost completely deprived of hearing. When the deafness is not so severe, improvement follows quicker and is more obvious. I was not given the choice of my patients, and it happened that only the worst cases were sent to me to experiment upon.

A course of aerotherapeutic treatment ought to be first administered to every one who claims special education and maintenance on account of deaf-muteness. Public and private charity should be more efficaciously exercised by curing disease than providing to the maintenance of the sick.

OBSERVATIONS

CASE 1.

A child, two years and half old, is stated to be deaf and dumb from his birth. He pronounces the syllable *pa*, repeated several times, when he is required to do so. Sometimes he does the movement to pronounce that syllable, but quite aphonically.

Very likely he does not hear at all.

There has been very profuse and bilateral discharge from his ears, since his birth. Both tympanic membranes are almost totally destroyed.

On his body were obvious marks of scrofula. The parents were said to be in good health; the mother was however dying of consumption.

The child has been treated by two aurists of Brussels, without the slightest result.

Closely observed, when in the Air-Bath, he seemed to feel at first no discomfort, it was only at the fourth sitting, that he put his hands to his ears, thus giving signs of some painful sensation, which was encouraging to notice.

Eleven sittings were administered, and then the treatment was discontinued because I could not ascertain whether the hearing was improving or not, the child being too young.

The only result quite striking was the disappearance of the discharges which had for a long time resisted the boric acid.

I should like to resume the treatment of that child, when he becomes sufficiently intelligent.

CASE 2.

A lad, fifteen years old, strongly built, but showing a very characteristic lymphatic temperament. His general health being satisfactory, though he easily catches cold which is accompanied by profuse discharge from the nose.

When fifteen months old, he was seized with convulsions for a whole day. In his sixth year during a fortnight he was very ill ; the symptoms being ague, convulsions and coma with hydrencephalic cry. When cured, he retained an *idiotic* countenance which is now very striking. Eight months later, he again suffered with the same disease for three weeks, and is said to have had two attacks of meningitis.

The whole family is in fact deeply marked by scrofula ; two sisters (3 and 4) and one cousin german (5) are also deaf and dumb ; one brother was deaf and has been cured by aerotherapeutic treatment.

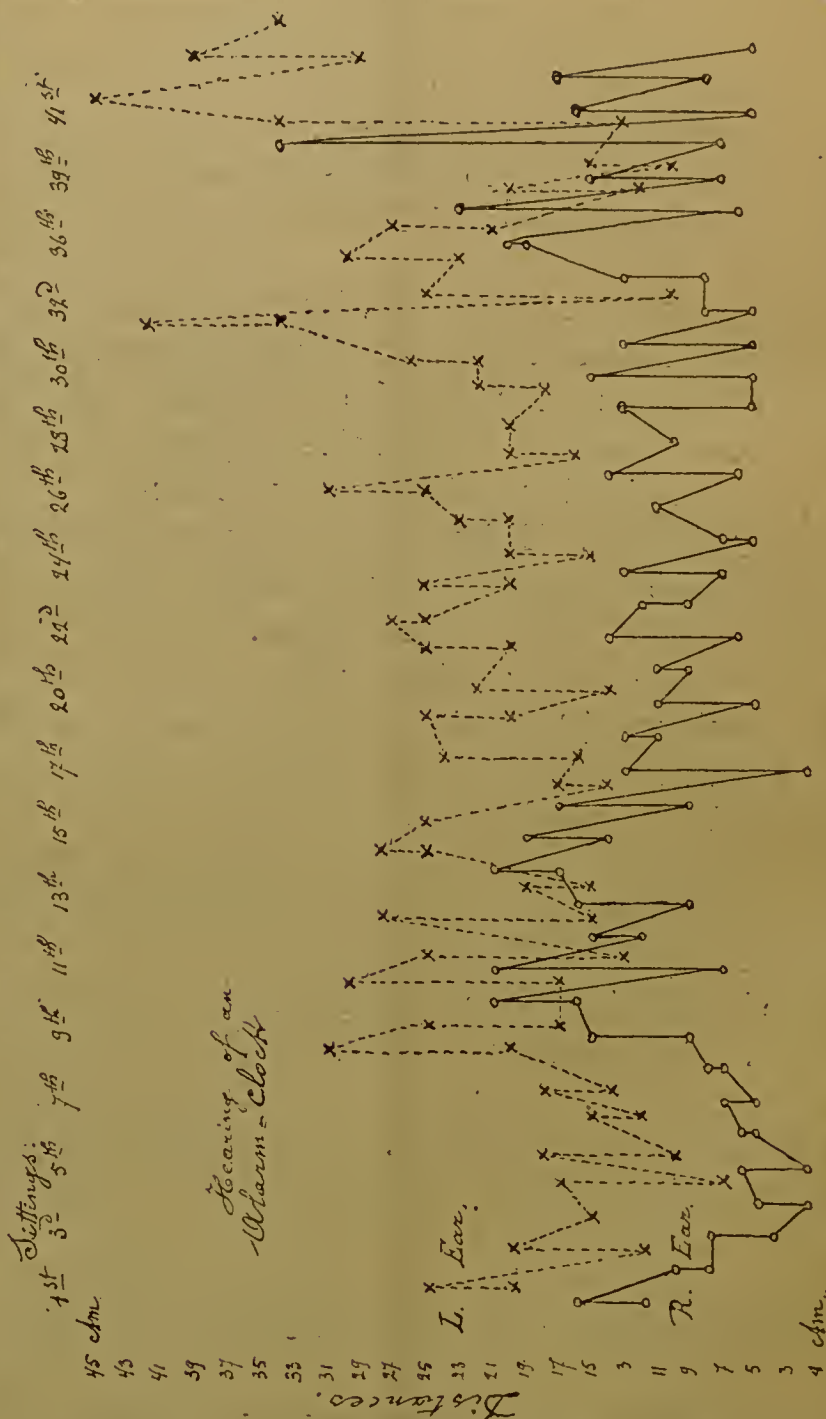
The hearing power is very low. The speech is incomprehensible, although the patient has had special education for about ten years.

The Eustachian tubes are permeable, but with some difficulty. The tympanic membranes seem normal though slightly congested. It is said that there has never been any discharge from the ears. The patient is not sufficiently intelligent to give exact reports on being tested with the tuning-fork.

The nares are the seat of chronic rhinitis, with general hypertrophy and complete stenose of the right one.

Pharyngeal tonsils considerably enlarged, chiefly the left one. The boy when asleep snores loudly ; he cannot blow his nose.

CASE 2



He has always been treated either at the Hospital St-Jean, or by the family physicians.

As may be seen by the corresponding diagram, the result is not satisfactory. Had I followed the usual course, I should have begun by removing the pharyngeal tonsils ; but being convinced that, with the Air-Bath alone, it is possible to cure the hypertrophic conditions without surgical intervention, I feel confident that had I been able to continue the treatment, the improvement, obvious in all the other cases, would have happened in this case.

CASE 3.

A girl, twelve years old, is deaf and dumb from her birth ; sister of 2 and 4, first cousin of 5 ; thorough lymphatic physionomy ; general appearance weak ; mouth widely open ; chronic rhinitis with profuse discharge ; colds easily caught ; chronic blepharitis.

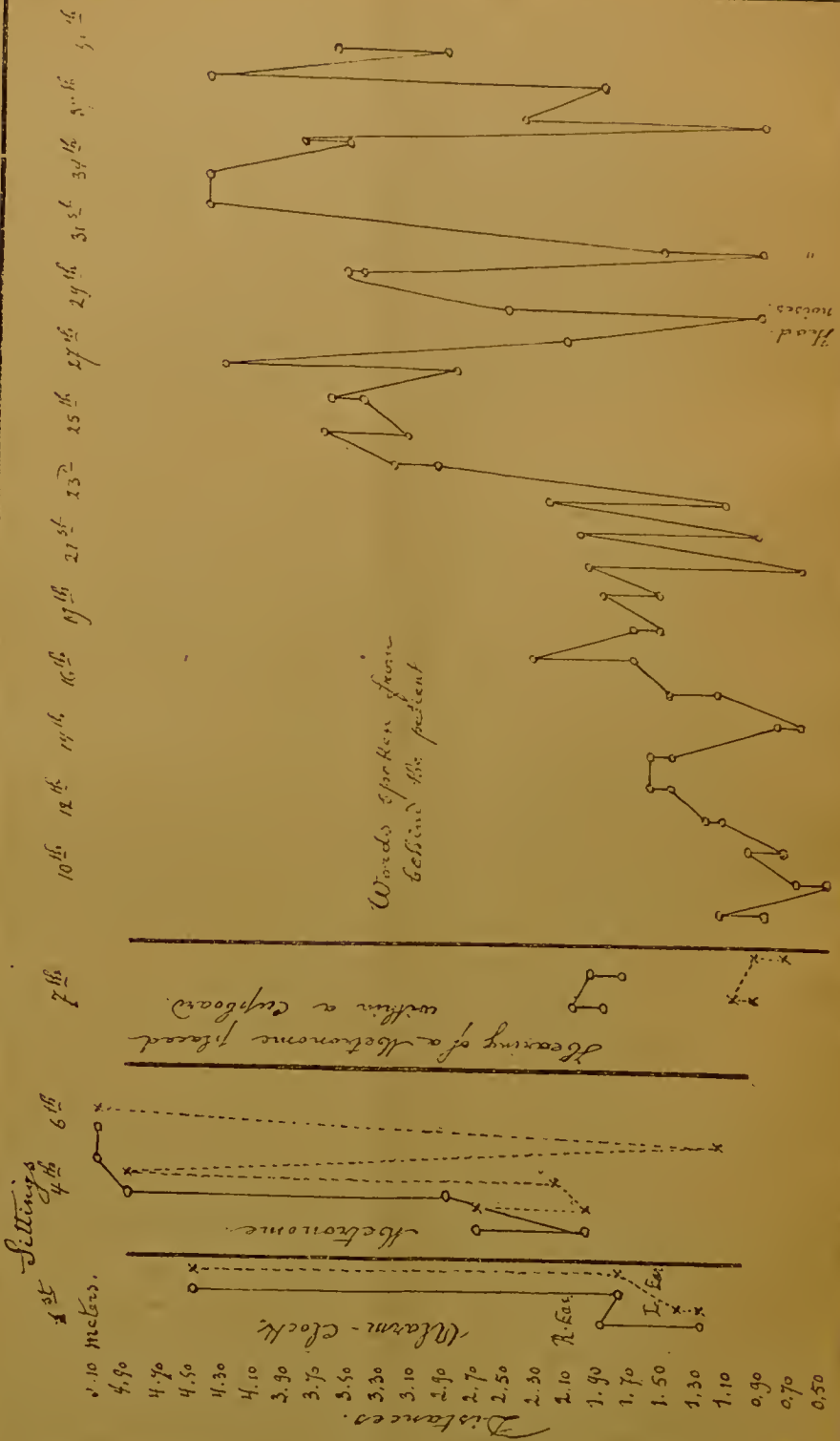
The parents, as also the whole family, are of a deeply lymphatic temperament. Besides the deaf-mutes referred to here above, one brother was deaf from catarrh of the middle ear, with obstruction of Eustachian tubes ; he has been cured by Air-Baths.

When it became obvious that she was deaf, the little girl was, for a long while, cared for at the Hospital St-Jean.

The patient does not hear her own voice, except when crying loudly. She perceives the alarm-clock at a distance of 1^m,30 ; her hearing is therefore much below an adequate degree. Noises in the head are sometimes annoying, and disturb the tests of hearing we take before and after every sitting. Her speech is not very intelligible ; she cannot communicate with other persons or other deaf-mutes except by signs.

It is said that she has never had any discharge

CASE 3



from the ears. However the auditory conduit's walls are covered by muco-pus and are much congested. The two tympanic membranes are sclerosed, with relaxation in some parts.

Chronic laryngitis and pharyngitis with very abundant granular processus. The larynx is free of tumours, but the pharynx is filled with adenoïd productions. The nares are the seat of chronic hypertrophic rhinitis equally extended in all directions, and almost completely interfering with the air-passage. Very profuse discharge of thick mucus. The Eustachian tubes are permeable with difficulty.

Aerotherapeutic treatment resulted in a gradually increasing improvement, with occasional relapses, coinciding with a return of more intense noises in the head.

On reference to the diagram it will be seen that the girl heard the voice at a distance of more than four meters, when she was not disturbed by noises in the head, which noises were said to be less frequent and less annoying than previously.

When the girl went back to her Institute, the Lady Superintendent wrote me : « La Supérieure des Sœurs de Charité présente l'hommage de ses félicitations à Monsieur le Docteur HOVENT, pour le succès obtenu chez Maria *** ».

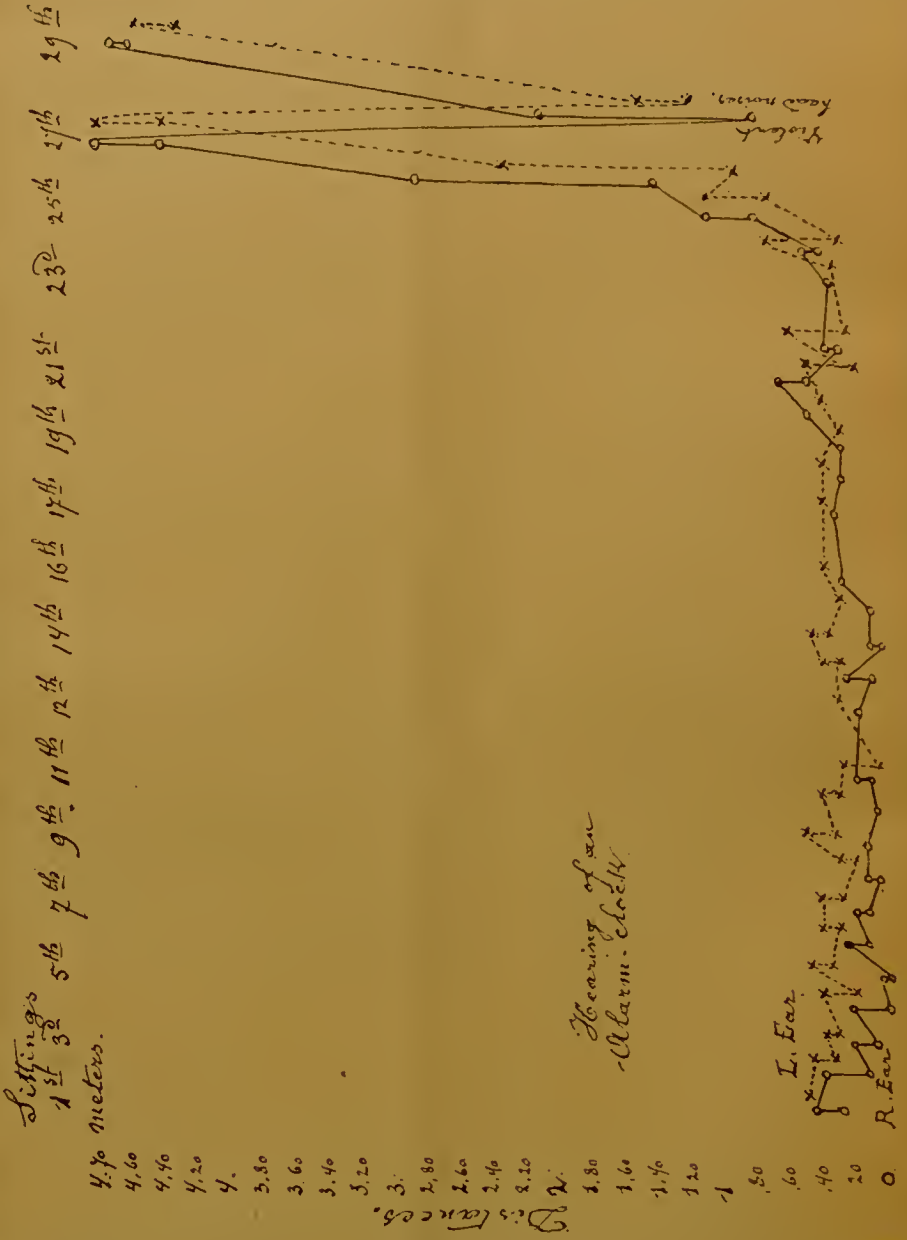
CASE 4.

A girl, six years old, is said to be deaf and dumb from her birth ; sister of 2 and 3, and first cousin of 5.

Face reveals scrofula ; obstruction of naso-pharyngeal cavities, in which, by the finger, one may touch voluminous adenoïd growths. Colds, easily caught, are accompanied by profuse discharge.

The external auditory conduit, examined with the

CASE 4



speculum auri, is observed to be wet and congested ; the same symptoms being present also at the level of the tympanic membranes, whose limits are hardly distinguishable.

The Eustachian tubes are obstructed.

The child is looked as absolutely deaf. Nobody can speak to her except by signs. According to the parents' statements, she is very intelligent ; she is however the patient with whom I had the greatest difficulty in testing the degree of hearing. I was chiefly perplexed when, contrary to my expectation, her hearing rose considerably in a short space of time. I then made the tests with the help of some three or more persons, and I took at all times the lowest limit at which the hearing was obvious.

For this reason, and because the tests might have been altered by the «noises of engines» whereof the child complained, I am not quite sure that the relapse observed on September 23rd was really so great as it would seem.

Aerotherapeutic treatment caused that the child could hear her own voice, by the help of the ear-trumpet ; it was the occasion of very rejoicing manifestations from her part. Once more it was much to be regretted that the treatment had to be interrupted.

CASE 5.

A lad, eighteen years old, having just finished his education in an Establishment for deaf-mutes. Strongly built ; but bearing obvious marks of scrofulous diathesis, such as large scars on the neck, etc. Bony system developed almost to exaggeration, chiefly the skull. General appearance not very intelligent.

CASE 5

Hittorff's

1st & 2nd

5th 7th 9th

12th

14th

16th

18th

20th

22nd

24th

26th

28th

30th

32nd

34th

2.20 meters.

2.10

2.0

1.90

1.80

1.70

1.60

1.50

1.40

1.30

1.20

1.10

1.0

.90

.80

.70

.60

.50

.40

.30

.20

.10

0

Hearing of an Alarm clock.

Hearing of a Metronome.

A. Hazz.

L. Hazz.

...

Alarm clock

Metronome

(diffusion)

General health good, though frequent colds, chronic blepharitis, short-sightedness, with pupils enlarged and almost insensible, and occasionally abscesses in various regions.

When fourteen or fifteen months old, discharge of the ears appeared some days after a severe cold. It was promptly healed, and the deaf-muteness was attributed to that circumstance; the subsequent attempts to re-establish the discharge were unsuccessful.

The whole family is in good health, though of well marked lymphatic temperament. The patient is the cousin germain of 2, 3 and 4.

He is considered as having entirely lost the use of the left ear; the right one is so deaf that it is absolutely useless. He has noises in the head, one continuous, another intermittent. The noises increase considerably under the influence of colds.

Deaf-muteness became obvious when the boy was two years old. He then learned to talk by monosyllables and signs, but with great effort, and he is understood by his relatives only. He had special education for eleven years, which indicates a low intelligence.

The left tympanic membrane is thoroughly destroyed. The external as also the middle ears are congested and covered with a moderate discharge. The right tympanic membrane is congested and wet. Eustachian tubes are obstructed.

The nares and pharynx are the seat of chronic catarrh with hypertrophy of the mucous membranes and tonsils. Loud snoring when asleep; mouth always widely open.

The patient has been treated for four months at the Hospital St-Jean and subsequently at hospitals of Louvain and Ghent. Several aurists of Belgium also have had to give advice.

After ten sittings, the result for the right ear was so considerable that I had to use other means to measure the improvement. It was but later that the left ear began also to improve considerably.

The great relapse observed after the thirty-second sitting was coincident with an attack of influenza and an increase of the noises in the head.

CASE 6.

A boy, twelve years old, is of a rather feeble constitution and of a lymphatico-nervous temperament. Nothing noticeable in his physical aspect, except that he is a monorchyde.

At his birth he had a severe bronchitis, with cyanosis, and somewhat later he caught icterus. Also in his earliest childhood he had several attacks of convulsions with coma which were diagnosed meningitis. At the same time there was a discharge from both ears. These troubles are attributed by the mother to her extreme nervousness during her pregnancy.

General health satisfactory ; colds easily caught ; chronic blepharitis, not granular. Intelligence not greatly developed. He had special education for seven years, and he is unable to pronounce even the vowels distinctly. He talks only by signs or monosyllables.

It is said to be no hereditary taint in the family ; however the parents are both very nervous. The father is suffering with urethral stricture, which is supposed to be of nervous origin. The mother has frequent headaches, and she is particularly uncomfortable during menstrual periods.

The boy is totally deaf in the right ear ; not quite so much in the left one.

CASE 6

Sittings.

1st 3rd 5th 7th 9th 11th 13th 15th 17th 19th 21st 23rd 25th 27th 29th 31st 33rd 35th 37th 39th 41st 43rd

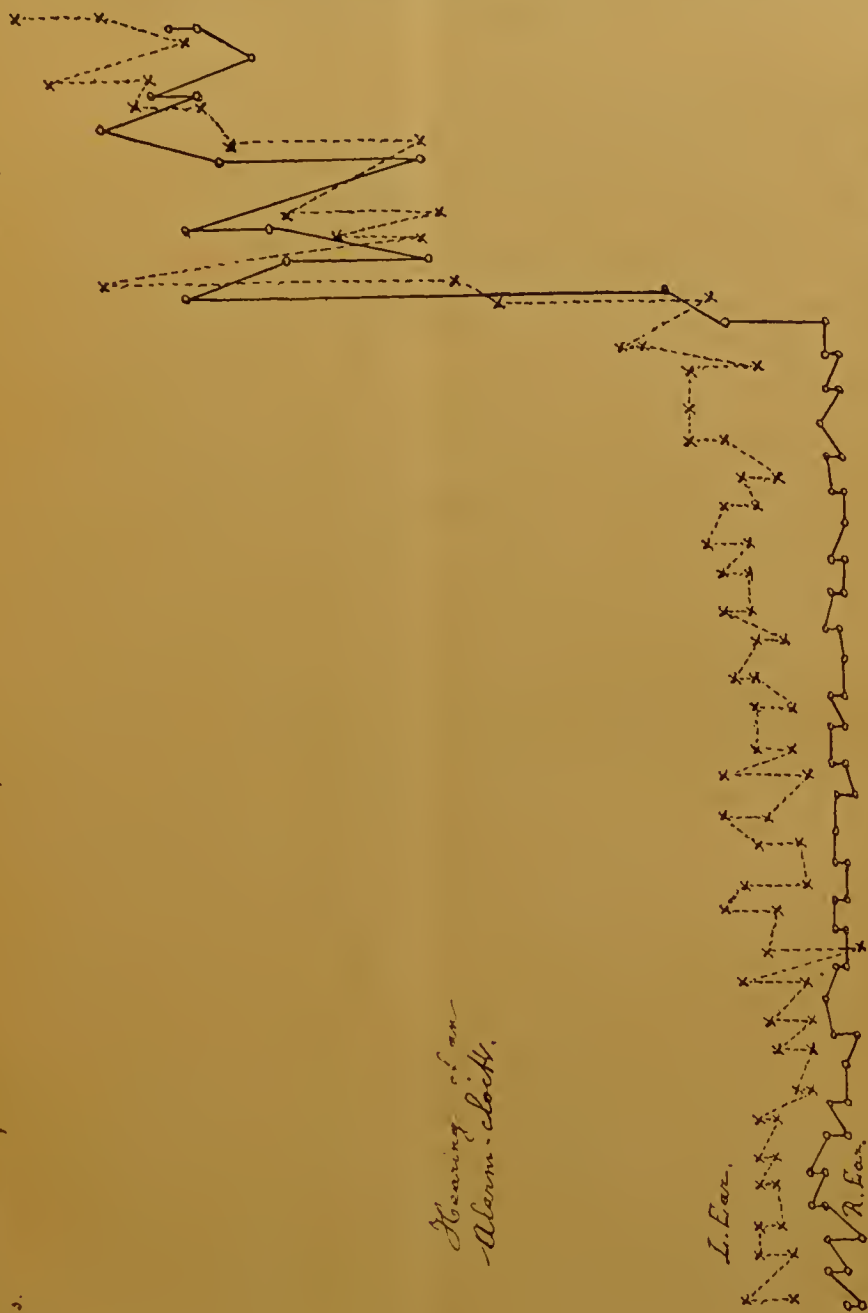
5. meters.

4.80
4.60
4.40
4.20
4.
3.80
3.60
3.40
3.20
3.
2.80
2.60
2.40
2.20
2.
1.80
1.60
1.40
1.20
1.
.80
.60
.40
.20
0

isn't it
Flouring of an
Alarm-clock.

L. Ear.

R. Ear.



The symptoms observed with the speculum auri are as follows: Both the external auditory conduits are wet and congested. Tympanic membranes are depressed and sclerosed; ossicles chain remaining easily movable.

At the laryngoscopic examination, we found a median tumour filling the pharyngeal vault. The nares are free but with chronic rhinitis and hypertrophic development of the right inferior turbinated bone. The pharynx presents chronic pharyngitis with granulations. It was difficult to test the permeability of Eustachian tubes; the result was doubtful.

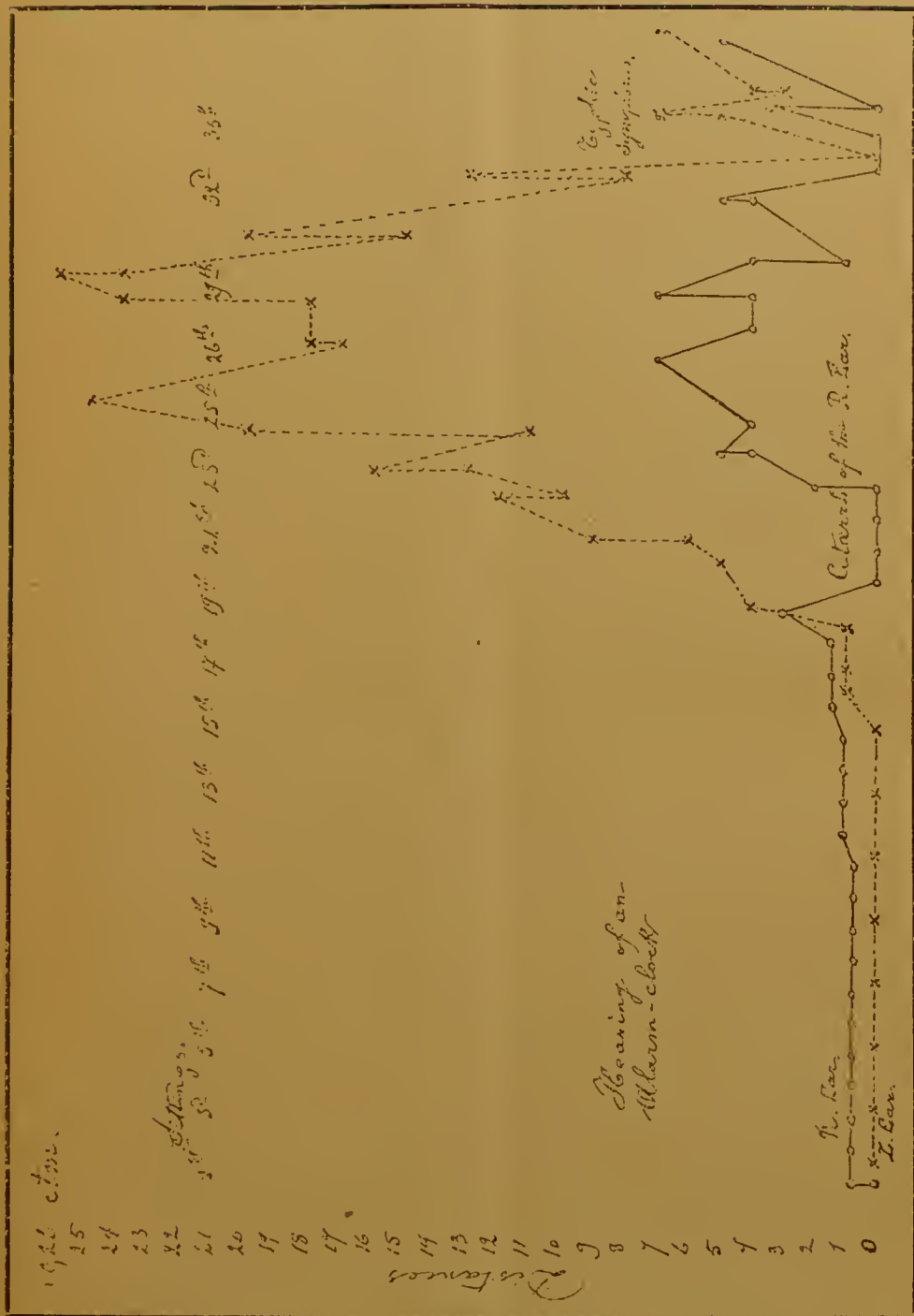
Two family physicians successively treated the patient, without result. Then three succeeding aurists were not more happy. The first two practised the Politzer's method of inflating the tympana; the last one, finally, advised travelling abroad.

During thirty sittings, aërotherapeutic treatment seemed unefficacious, when, by unknown reason, the improvement became very obvious and made the parents anxious to persevere, which was prevented by administrative regulations.

CASE 7.

A boy, fifteen years old, is of rather feeble constitution and lymphatico-nervous temperament. General health very satisfactory till he was one year old, when he was seized with convulsions alternating with coma for two or three months. This trouble was diagnosed meningitis and was terminated by deaf-muteness, for which the child was under treatment for seven or eight months. The aurist of the Hospital St-Jean gave him up then and declared the case to be absolutely incurable. Discharges from the ears appeared at the seventh or eighth year accompanying occasional severe colds.

CASE 7



Neither of the parents seems to be in good health ; both showing scrofulous or tuberculous symptoms.

The hearing power of the boy is so low that I can find no means to test the result I am hoping to produce. Alarm-clock is not heard even when pressed to the ears.

The boy has been specially educated for twelve years ; he speaks mechanically with great effort.

Both tympanic membranes are somewhat congested and movable. The right one is slightly perforated near the extremity of the manubrium of the malleus.

Larynx and nose show nothing worthy of notice except a slight catarrhal rhinitis. Pharyngeal tonsils are enlarged. There is no obstruction of Eustachian tubes.

Two aurists of Brussels and several other physicians have had to treat this boy.

My first idea was to refuse this patient as I could not hope to obtain a satisfactory result in deaf-muteness following meningitis. But he was so anxious to try the treatment and I had experienced so much trouble in getting some pupils to experiment with, that I decided to accept him. At the first sitting (with the alarm-clock placed on the ears) he signified that he could detect the vibrations with both ears. After this I could remove the alarm from the right ear. This indicated that he could then perceive other sensations than the vibrations of the clock. This encouraged me to continue the treatment, but without appreciable result ; however after the eighteenth sitting an improvement suddenly occurred on both sides. I again examined the two tympanic membranes and prescribed washing of the ears to remove the cerumen. The day after, the boy came complaining of severe earache on the right side ; an external otitis had appeared and was due to washing

with too hot water. The left ear continued progressing surprisingly till the thirtieth sitting when the patient was seized with febrile symptoms, which, for a moment, I feared might be typhoid fever. Finally the treatment was discontinued when the end of the holidays came.

CASE 8.

A lad, fifteen years old, having just finished his special education at an Institute for deaf-mutes. He is strong and well developed; of lymphatic temperament; mouth wide open, from which the saliva flows. The general aspect is not a very intelligent one.

At his birth, his head was elongated, though the accouchement was absolutely normal in its duration and its difficulties. The midwife made some manipulations to impart to the skull its normal shape. A fall on the head, occurred in his youth, is also to be noticed. Some colds were occasionally caught before the third year, when it became obvious that the boy was deaf. Very loud noises then made no impression on him. The deafness was accompanied by discharges from both ears.

It was only when the boy was seven years old that he began to articulate some sounds. He uttered *pa pa pa* and *pa ma*. Attaining his eighth year, he was sent to a public school, but his teacher soon judged it was useless to try with him the ordinary methods of instruction, and it was decided that the boy should go into an Institute for deaf-mutes. After five years special education, he came back to his parents in the following conditions.

He can perceive several sounds or noises when loud enough, but not his own voice, except when crying. In conversation, he does not try to hear, but reads from

the lips what is said. When I talked with him, his eyes being closed, he could hear my loud voice at a distance of fifteen centimeters from his ears; but he did not understand the meaning of my words, nor was he able to repeat them. His mother had to repeat my words by signs. It was obvious that the hearing power was so low that it was useless.

He loathes society, where he seems to find only jokes or commiseration. When with other deaf-mutes, however, his features soon change; he becomes happy and even cheerful. His voice is weak, monotonous, faltering, hardly intelligible, except for some common words. His vocabulary is very limited.

The parents as also one brother and two sisters are said to be in perfect health. But, after some investigation it was found that the whole family were deeply lymphatic, suffering with chronic troubles of throat and nose.

The father had even to be submitted to several operations to remove nasal and pharyngeal adenoïd tumours; he is totally deaf in his right ear, and hears almost nothing with the left one. His case was diagnosed chronic catarrh of the middle ear, with obstruction of Eustachian tubes; after some five or six Air-Baths, he was very much improved.

With speculum auri, the right tympanic membrane of the boy is seen to be very congested, as also the walls of the external auricular conduit. Manubrium of the malleus is prominent, white and encircled by a zone of strong congestion. The posterior and inferior quarter of this membrane is sclerosed and in a relaxed condition.

At the left ear, the congestion of the external conduit does not extend to the tympanic membrane, and this latter is almost totally sclerosed, bright and transparent.

Both Eustachian tubes free from obstruction, the right one more than the left one.

The nares present bilateral hypertrophic rhinitis with very profuse discharge. Soft palate as also pharyngeal walls are strongly congested and granular. Tonsils, chiefly the left one, are much enlarged. The boy easily catches cold, on which occasions he cannot blow his nose, and the deafness becomes absolute. When asleep he snores very loudly.

As to the treatments previously followed, the boy was cared for from the time the parents could perceive that he was a deaf-mute, viz. from his third year. He was first brought to the Hospital St-Pierre and afterwards to the Hospital St-Jean, where, for three years, the Politzer's method of inflating the tympana was practised once or twice a week. At last the parents were advised by the aurist of the Hospital St-Jean to practise themselves the Politzer's method. This was done without any other result as a momentaneous improvement. When the boy was full-grown he was twice operated on for pharyngeal tumours, but without result for the hearing function.

After the first sitting of aerotherapeutic treatment, the improvement was so obvious, that it was spontaneously remarked by persons who did not know he was under a new treatment. The voice was then heard at 3^m40 instead of 0,15 centimeters. Before the second sitting, this measure was only 3^m00 and afterwards, it was 5^m70. This is to say : two hours treatment had been sufficient to give this patient the hearing power required to be eligible for the military service, (generally 4 meters). For the first time in his life, he could now hear a watch.

Improvement was so progressive that after a few days the boy could hear loud and whispered voices at a great distance. He could repeat some words which

were very well known to him; but not every word, because, though he could hear, he was unable to repeat words he had never heard before.

For more than two years he has now been in business, as a butcher, and he can hear and speak as well as anybody.

CASE 9.

A young man, twenty-one years old, deaf and dumb, as also his sister who is twenty four years old. General health weakened by frequent bronchitis, by which he has been attacked since his youth; lymphatico-nervous temperament.

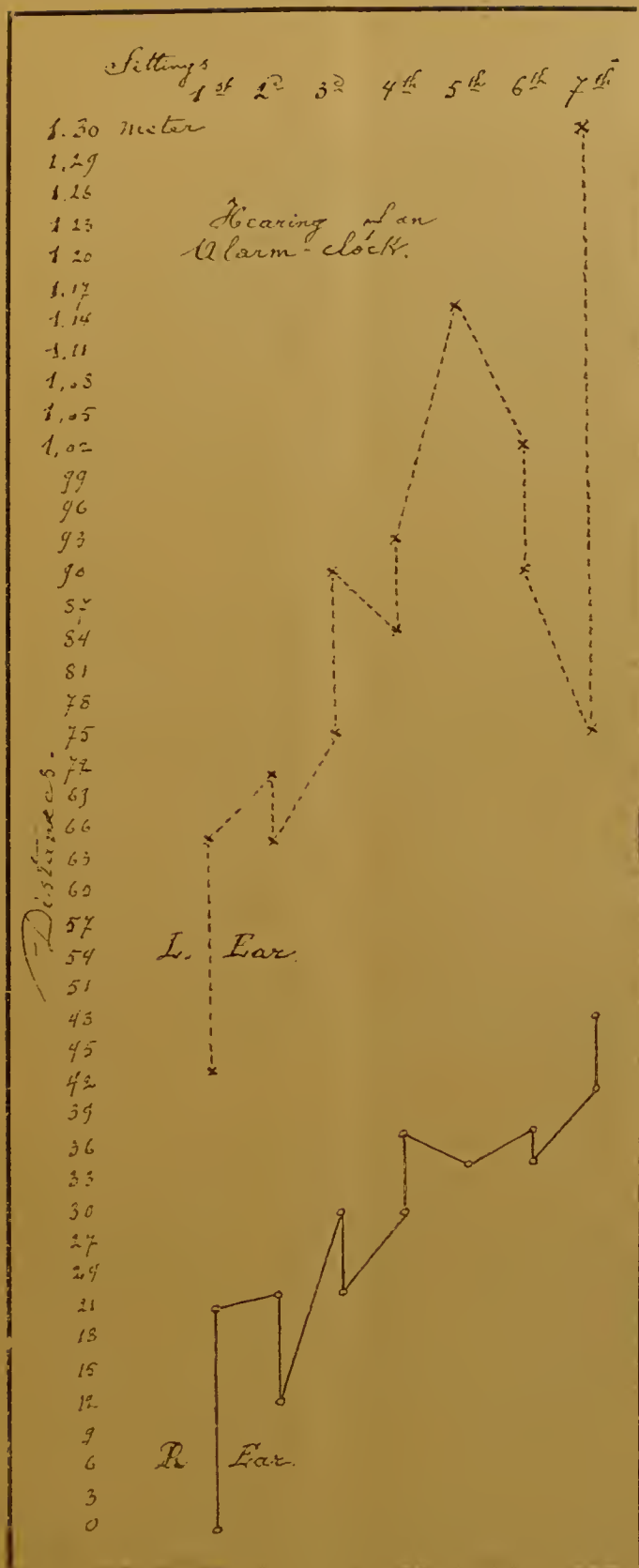
He had special education for ten years. He cannot converse otherwise than by signs. He seems to pronounce correctly but hesitatingly and almost aphonically; therefore he is hardly comprehensible except by his relatives.

The hearing is absolutely wanting in the right ear; in the left one, alarm-clock is heard at 43 centimeters. Noises in the head are frequently very annoying; they are either continuous or intermittent and they become much aggravated under the influence of fresh cold.

Nares present the signs of chronic hypertrophic rhinitis with very profuse nasal discharge. Isthmus of fauces, larynx and pharynx are also the seat of a chronic catarrh. Bronchitis, as I said heretofore, is frequent; it generally begins with a coryza and is always quite severe. Eustachian tubes are easily permeable.

Examination with speculum auri reveals no other injury on either side than a slight degree of sclerose and relaxation of the tympanic membranes.

CASE 9



There has never been any discharge from the ears.

Tuning-fork, both on forehead and vertex is heard better in the left ear.

When it became obvious the patient was deaf and dumb, his parents, who are in easy circumstances, thought that once again hereditary taint was present: and as they had been unsuccessful in the case of their eldest daughter, notwithstanding the most skillful treatments, they decided not to have recourse for a long while to special treatments. The boy was almost always in the hands of physicians, but chiefly for bronchitis.

Aerotherapeutic treatment gave an immediate result, but unfortunately, the young man was frequently absent for business reasons, and I had seldom opportunity of measuring exactly the improvement, which was obvious to the patient and his relatives.

After about thirty sittings, he was able to hear his own loud voice. I then supplied him with an ear-trumpet to help him to read twice or thrice a day, without too much raising the voice. Time after time he came to my Establishment, delighted that he had heard for the first time sounds he had never before suspected.

After fifty hours of treatment, the young man, having his back turned, can hear my ordinary voice at a distance of four meters. Though hearing every word, he cannot repeat them, except the most usual ones; indeed he has now to learn a new language. The treatment having been discontinued when the result was not yet sufficiently considerable, it might be that the improvement has not been lasting.

It is worthy of remark that while this patient

formerly suffered from frequent, almost weekly colds, he is now quite free from them ; a result I confidently expected from the Air-Baths treatment.

CASE 10.

A girl, sixteen years old, strongly built, with a lymphatico-nervous temperament. General health very satisfactory, if we except chronic catarrhal affections of nose and throat as also dysmenorrhœa.

During her early life, she was considered as feeble minded. She began to articulate only when four or five years old, and then she was placed under the care of a special teacher. She learned to talk with great ease, but her hearing power is so low that it is useless. Her deficiency in this respect would pass without notice ; she reads so perfectly from the lips of persons with whom she converses.

The causes of her infirmity are not satisfactorily acknowledged.

Mucous membranes of nose and pharynx are considerably hypertrophied, and frequently the cavities are obstructed, so that the respiration is performed by the mouth, and when the patient is asleep, she snores loudly.

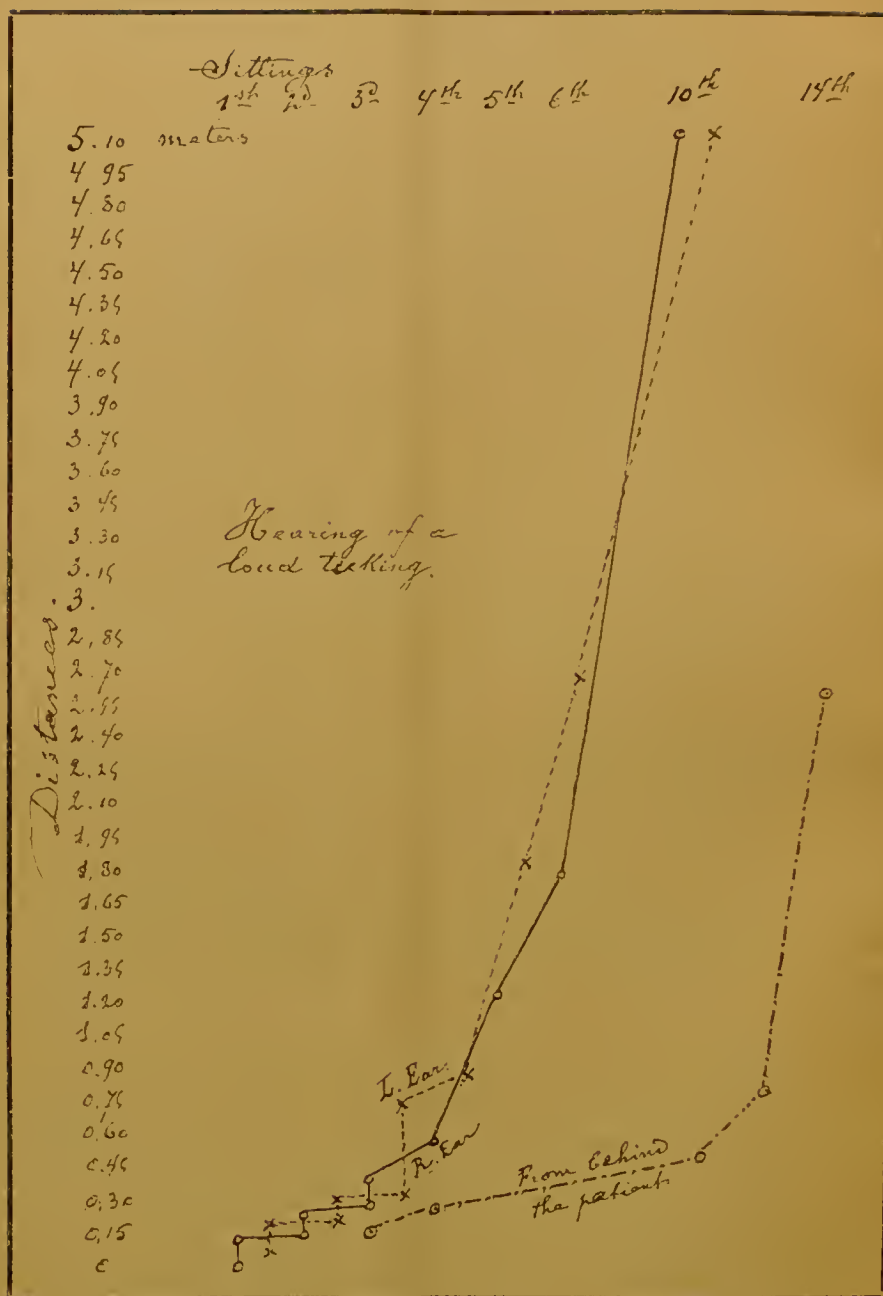
Eustachian tubes are obstructed.

Tympanic membranes seem almost healthy ; there is but little congestion at the manubrium of the malleus. There is no discharge.

She has frequent noises in the head, of varied character.

She does not hear the voice, except when very loud, close to her left ear, the better one of the two. She hears the metronome at a distance of four meters.

CASE 10



She had always had every advantage, had spent season after season in various health-resorts ; her parents have spared neither time, money, nor trouble in procuring for her the advice of the best specialists available in Europe ; but without the least success, until she came to my Establishment.

After a course of seven sittings, she had gained 3 meters with the metronome. After an interruption of about one month she again came to my Establishment without having lost any ground. Another course of treatment of 33 sittings gave further improvement of 4 meters, which makes a total gain of seven meters.

The hearing power for speech does not seem to gain in the same proportion. Sometimes the improvement was very obvious, but never was a constant proportion between the hearing for watches, of different kinds, and the hearing for voice.

The corresponding diagram shows one period only of the aerotherapeutic treatment, when I began to measure with american watch.

I advised another interruption from which I hope further improvement as the girl will be compelled to use her hearing meantime. When she left my Establishment, she could hear her own little watch at a distance of 5 centimeters from both ears.

Another result of the Air-Bath which is well worth reporting is its influence on dysmenorrhœa. The menstrual periods now return without the least discomfort, as I had expected.

As to the catarrhal affection of nose, throat, etc., it is so much improved that the patient claims her nose is thinner and her voice less snuffling.

CASE 11.

A little girl, seven years old, absolutely deaf from her birth, and described by the parents as the most intelligent of her age. They say she can speak fluently as well as anybody ; but I did not hear her voice except in cries and inarticulate sounds.

The mother wrote me, her child had been treated «by the most competent aurists of Belgium, France and Germany, at very great expense, and never the least improvement was produced».

It is said the girl was never sick, and had no discharge from the ears.

Her brother is also severely deaf, but at a less degree, and the father, a civil engineer, by a queer manner of reasoning, promised that should I be quite successful with his girl, he should like to have his boy treated in the same way.

Only one Air-Bath was administered and gave the following result :

	RIGHT EAR	LEFT EAR
Before the sitting,	4 ctm.	8 ctm.
After » »	10 »	13 »

measures being taken by the parents with the alarm-clock.

Therefore, after an hour of treatment, the hearing power was fourfold. I was in hopes of a wonderful success, but on account of the coarse behaviour of the parents I had to give up any treatment.

CASE 12.

A gentleman, thirty years old, deaf-mute from his birth, brother of another deaf-mute.

When a boy, and still nowadays, he has been and is treated by the better known aurists of Belgium and abroad.

Strongly built, with marked lymphatic temperament. General health very satisfactory, though very frequent colds are easily caught. Further particulars were not collected, the patient being under care of the family physician, a prominent practitioner who sent him at aerotherapeutic treatment.

Hearing power is so low that it is of no use. He cannot converse except by signs and reading from the lips. He understands and repeats only some very usual words, without phrases.

After the third hour of treatment, the family physician saw the patient and wrote me: «I am very happy in your success; I shall do my best to send you two or three other cases of this kind».

When the patient came out the air-chamber, after the third sitting, he was so obviously improved that his brother was so affected as to shed tears. Then my loud voice was heard, but not understood, at a distance of 5 meters. The patient had now to learn to understand the meaning of what he heard. I tried to help him in this way; but it was a difficult task, on account of the great irregularities of his visits. Finally, to the deep regret of the patient and his friends, we had to give up momentarily any treatment.

CASE 13.

A pretty little girl, seven years and a half old, strong and well developed ; lymphatico-sanguineous temperament. Very good health. Four years ago it was found out she was deaf and had discharge from the ears, with very offensive smell. Aetiology and beginning of that affection have not been elucidated ; nobody could give particulars on that account.

The girl was immediately cared for at Hospital St-Jean ; treatment being : Politzer method and varied injections in the external ears. It is said that this treatment produced a cutaneous eruption around the left ear, only healed by a professor of the University and Member of the Academy of Medicine.

Afterwards, the aurist deemed the case absolutely hopeless. He advised to practise frequent massages of the tympanic membranes, in order to prevent the closure of the perforations, and to have the discharge flowing freely outside. Of course, under such a treatment, the deafness grew worse every day, and the child was obviously getting deaf and dumb ; she already talked aphonically and was trying to read from the lips of the persons who spoke to her.

Tympanic membranes are perforated ; discharge more profuse in the right ear. Eustachian tubes permeable. Nothing worthy of notice is discovered by tuning-fork.

Discharge was healed, and hearing for voice and watch was restored after two sittings of three quarters of an hour each.

		RIGHT EAR.			LEFT EAR.		
1 st sitting	}	Before	9 ctm. watch.		5 ctm. watch.		
		After	18	»	»	17	»
2 nd	»	After	70	»	»	70	»

The cure being complete after the two sittings, the treatment was discontinued.

CASE 14.

One of the most eminent physicians of Belgium, professor of University, late President of the Academy of Medicine, etc., had been under aerotherapeutic treatment for a deafness which began some twenty years ago. The result having been quite encouraging, he decided to prescribe the same treatment to the son of one of his relatives, a boy, fifteen years old, who had suffered many attacks of gout, two of them having been very severe.

This boy is so deaf that a special education has to be given him. For many years he has been cared for by the leading aurists of Belgium and France. Never the least change has occurred and always the deafness has been progressively increasing.

The two tympanic membranes are quite incrustated with gouty tophi, which an aurist lately proposed to remove by an electric operation on these membranes. This was not accepted by the patient's mother, because the aurist had no hope, in so doing, to improve the hearing of the boy.

When this fatal condition of the tympanic membranes was revealed to the honourable professor, he advised to dismiss the patient without applying any treatment whatever. Fortunately, it was too late ; the patient's mother had accepted to *try* the method ; an Air-Bath had been administered on the previous day and had given such a result that the professor was much amazed.

Here are the figures showing how quickly the treatment was successful ; the measure being taken with an ordinary watch :

		RIGHT EAR.	LEFT EAR.
1 st sitting.	Before	14 ctm	7 ctm.
	After	30 "	20 "
2 nd "	Before	35 "	22 "
	After	50 "	80 "

As to the hearing for voice, it was also growing very quickly. Loud voice of the mother could not be heard even close the back of the boy. My voice was heard at 0^m50, and after the first sitting, at 2^m50; after the third sitting, at 8 meters.

I tried then whispered voice which progressively became audible at 8 meters after the fifth sitting.

A total of sixteen Air-Baths were administered.

The boy started for holidays, and three months later I had occasion to examine him again; tympanic membranes are unchanged, but the hearing is quite preserved.

One year and a half later, I saw the boy who for some days had been getting deaf. I cannot say at what degree because he had already been in the Air-Bath, when I could measure his hearing. After the third sitting, loud voice was again heard at 8 meters; whispered voice was heard at 4 meters after the fourth Air-Bath; and complete cure was obtained as quickly as in the first instance.

CASE 15.

A Lady, forty seven years old, of very poor general health, is deaf since her childhood. Being very wealthy, she never omitted to take advise of the best aurists in Europe. She was sent to the Air-Baths, as a consequence of a consultation between a member of the

Academy of Medicine and the most learned, though the youngest, aurist of Brussels. She got the following result :

		AMERICAN WATCH		FROM BEHIND THE PATIENT	
		RIGHT EAR	LEFT EAR	LOUD VOICE	WHISPERED VOICE
1 st sitting	Before	25 ctm.	7 ctm.	1 ^m	0
	After	19 »	9 »	0.80	0
2 nd "	Before	25 »	50 »	1.50	0 ^m 30
	After	40 »	60 »	6.	1.
3 rd "	Before	44 »	80 »	8.	2.
	After	50 »	1 ^m 30 »	»	2.70

ORDINARY WATCH.

4 th sitting	After	13 ctm.	9 ctm.	»	2.50
5 th "	»	18 »	12 »	»	4.
6 th "	»	21 »	12 »	»	4.
7 th "	Before	50 »	50 »	»	8.
8 th "	»	85 »	85 »	»	»

A total of ten sittings were administered.

Not only the hearing was quite restored, but also the general health was so improved that it was spontaneously observed by many persons.

